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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/086,758	02/28/2002	Dan Eldon Hendriksen	96B026/6	1202

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EXAMINER

ILDEBRANDO, CHRISTINA A

ART UNIT	PAPER NUMBER
1725	4

DATE MAILED: 07/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n N .

10/086,758

Applicant(s)

HENDRIKSEN ET AL.

Examin r

Christina Ildebrando

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-- The MAILING DATE of this c mmunicati n appears n the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>3</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 120 as follows:

An application in which the benefits of an earlier application are desired must contain a specific reference to the prior application(s) in the first sentence of the specification or in an application data sheet (37 CFR 1.78(a)(2) and (a)(5)). The specific reference to any prior nonprovisional application must include the relationship (i.e., continuation, divisional, or continuation-in-part) between the applications except when the reference is to a prior application of a CPA assigned the same application number.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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3. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Verduijn.

Verduijn (WO 92/12928) discloses a catalyst composition useful in hydrocarbon conversion processes. The catalyst composition comprises a substantially binder-free zeolite composition, which is produced by aging a silica bound zeolite aggregate under conditions sufficient to convert the silica binder to zeolite of the type initially bound (page 3). With regards to the language of the claims, the initial zeolite is the "first zeolite" and the newly formed zeolite is the "second zeolite." It is taught that the newly-formed zeolite may be produced as crystals grown on and surrounding the initial zeolite crystals and may also be produced in the form of new intergrown crystals (page 5). Suitable zeolites include zeolite omega (structure type MAZ) (page 3). It is taught that the term "substantially binder-free" refers to the use of less than 10%, preferably less than 3%, by weight of non-zeolitic binder (page 3).

As each and every element of the claimed invention is taught in the prior art as recited above, the claims are anticipated by Verduijn.

4. Claims 1-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Mohr et al.

Mohr et al. (US 5,993,642) discloses a hydrocarbon conversion process using a zeolite bound zeolite catalyst. The zeolite bound zeolite catalyst comprises first zeolite particles which have an average particle size greater than 0.1 micron and a binder comprising second zeolite particles having an average particle size less than the first particles (column 2, lines 50-57). The average particle size of the first zeolite is preferably from 0.1-15 microns, more preferably from 2-6 microns and the average

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particle size of the second zeolite is preferably from 0.1-0.5 micron (column 4, lines 20-25). The reference teaches that the second zeolite particles bind the first zeolite particles by intergrowing so as to form a coating or a partial coating on the larger first zeolite crystals (column 3, lines 1-5).

Suitable zeolites include large pore zeolites such as MAZ, MEI, EMT, and MOR (column 3, lines 50-60). The reference specifically claims that the first and second zeolite particles include zeolites of type MAZ, MEI, EMT, and mordenite (column 23, lines 5-12 and 30-35). The first and second zeolite particles may be the same structure type (column 23, lines 15-18).

The zeolite bound zeolite catalyst composition is prepared from a silica bound extrudate of the first zeolite crystals by converting the silica present in the extrudate which serves to bind the zeolite particles together (column 7, lines 15-20). In this way, the catalyst composition does not contain significant portions of non-zeolitic binder, i.e. preferably less than 5% by weight of non-zeolite binder (column 7, lines 25-30).

Regarding claim 10, the reference does not specifically teach that the second crystals are resistant to attrition. However, it is the position of the examiner that because the reference teaches the use of the same zeolite composition, from the same materials, and produced by the same process, the second crystals would inherently be resistant to attrition. When the examiner has reason to believe that the functional language asserted to be critical for establishing novelty in claimed subject matter may in fact be an inherent characteristic of the prior art, the burden of proof is shifted to

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Applicants to prove that the subject matter shown in the prior art does not possess the characteristics relied upon. *In re Fitzgerald et al.* 205 USPQ 594.

As each and every element of the claimed invention is taught in the prior art as recited above, the claims are anticipated by Mohr et al.

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 1-10 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 4-6 and 13-14 of U.S. Patent No. 6,040,259. Although the conflicting claims are not identical, they are not patentably distinct from each other.

US 6,040,259 claims a zeolite bound zeolite catalyst which does not contain significant amounts of non-zeolitic binder comprising (a) first crystals of a first zeolite, and (b) a binder comprising second crystals of a second zeolite, wherein said second crystals are intergrown and form at least a partial coating on said first crystals, wherein said first crystals of said first zeolite have an average particle size greater than about

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0.1 micron and said second crystals of said second zeolite have an average particle size that is less than said first crystals of said first zeolite, wherein said first zeolite is a structure type selected from the group consisting of OFF, BEA, MAZ, MEI, FAU, EMT, LTL, VFI, MOR, MFI, MFS, MEL, MTW, MTT, FER, EUO, HEU, TON, CHA, ERI, KFI, LEV, and LTA (claim 4). The first and second zeolite may be the same (claims 4 and 5). The first and second zeolite are aluminosilicate or gallium silicate zeolite (claim 6). The catalyst is prepared by aging a silica bound aggregate containing said first crystals of said first zeolite under conditions sufficient to convert the silica binder to the second zeolite (claim 13). The zeolite bound zeolite catalyst contains less than 5% by weight of non-zeolitic binder (claim 14).

The instant claims differ from those of '259 by reciting a more limited genus. The claims of '259 include the large pore zeolites of structure type MAZ, EMT, MEI, and MOR, required by the instant claims. It would have been obvious to one having ordinary skill in the art at the time of the invention to select any of the species claimed by '259, including those of the instant claims, because one of ordinary skill would have the reasonable expectation that any of the species of the genus would have similar properties and, thus, the same use as the genus as a whole.

7. Claims 1-2 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3, 7, and 13-14 of U.S. Patent No. 5,665,325. Although the conflicting claims are not identical, they are not patentably distinct from each other.

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US 5,665,325 claims a zeolite bound zeolite which is substantially free of non-zeolitic binder comprising a first zeolite crystal selected from the group consisting of MFI, KFI, Y, Beta, Omega (structure type MAZ), Chabasite, T, Offretite, ZSM-22, ZSM-23, titanosilicate, ZSM-34, and ZSM-12 bound together with second zeolite crystals (claim 1). The second zeolite crystals are grown on and surround said first zeolite crystals (claim 2).

The instant claims differ from those of '325 by reciting a more limited genus. The claims of '325 include the large pore zeolite of structure type MAZ, required by the instant claims. It would have been obvious to one having ordinary skill in the art at the time of the invention to select any of the species claimed by '325, including those of the instant claims, because one of ordinary skill would have the reasonable expectation that any of the species of the genus would have similar properties and, thus, the same use as the genus as a whole.

8. Claims 1-4 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 6 of copending Application No. 10/127,805. Although the conflicting claims are not identical, they are not patentably distinct from each other.

Copending Application No. 10,127,805 claims a zeolite bound zeolite catalyst comprising (a) first crystals of a first zeolite, and (b) a binder comprising second crystals of a second zeolite, wherein said second crystals are intergrown and form at least a partial coating on said first crystals, wherein said catalyst does not contain significant amounts of non-zeolitic binder, wherein said first crystals of said first zeolite having an

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average particle size greater than about 0.1 microns, wherein said second crystals of said second zeolite have an average particle size that is less than said first crystals of said zeolite, and wherein said first zeolite is a structure type selected from the group consisting of OFF, BEA, MAZ, MEI, FAU, EMT, LTL, VFI, MOR, MFI, MFS, MEL, MTW, MTT, FER, EUO, HEU, TON, CHA, ERI, KFI, LEV, and LTA (claim 6).

The instant claims differ from those of '805 by reciting a more limited genus. The claims of '805 include the large pore zeolites of structure type MAZ, EMT, MEI, and MOR, required by the instant claims. It would have been obvious to one having ordinary skill in the art at the time of the invention to select any of the species claimed by '805, including those of the instant claims, because one of ordinary skill would have the reasonable expectation that any of the species of the genus would have similar properties and, thus, the same use as the genus as a whole.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Verduijn et al. (US 6,150,293), Verduijn et al. (US 6,350,428), Mohr et al. (US 6,458,736), Verduijn et al. (US 6,504,074), Hendriksen et al. (US 6,111,157) and Verduijn et al. (US 2002/0183192) all disclose zeolite bound zeolite compositions.


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Sakurada et al. (US 4,977,120), Bowes (US 4,872,968), and Hees et al. (US 6,051,051) disclose binder-free zeolite compositions. Patil et al. (US 5,248,643) discloses mixed zeolite catalysts.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Ildebrando whose telephone number is (703) 305-0469. The examiner can normally be reached on Monday-Friday, 7:30-5, with Alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (703) 308-3318. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.


Christina Ildebrando
Patent Examiner
Art Unit 1725
7/14/03

CAI
July 14, 2003